AMENDMENTS

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 21. (Canceled)

22. (Currently amended) A high quantum efficiency image sensor comprising:

a well region of a first conductivity in a substrate of a second conductivity opposite to said first conductivity wherein said well region in said substrate forms a photodiode; and

an isolation region within said substrate overlying edge portions of said photodiode;

~~a stop layer overlying said photodiode; and~~

~~an interlevel dielectric layer overlying said stop layer~~

wherein said isolation region comprises a stop layer, located at a bottom of the isolation region and adjacent to said photodiode; and

wherein a dielectric material fills the isolation region.

23. (Original) The image sensor according to claim 22 wherein said well region is an N-well and said substrate is a P-substrate.

24. (Original) The image sensor according to claim 22 wherein said well region is a P-well and said substrate is an N-substrate.

25. (Original) The image sensor according to claim 22 wherein said isolation region is a shallow trench isolation.

26. (Original) The image sensor according to claim 22 wherein said stop layer comprises silicon nitride or silicon oxynitride.

27. (Original) The image sensor according to claim 22 wherein said stop layer has a thickness of between about 400 and 1000 Angstroms.

28. (Currently amended) The image sensor according to claim 22 wherein said ~~interlevel~~ dielectric material ~~layer~~ comprises silicon oxide.

29. (Currently amended) The image sensor according to claim 22 wherein said ~~interlevel~~ dielectric material ~~layer~~ has a thickness of between about 7000 and 13,000 Angstroms.

30. (Currently Amended). The image sensor according to claim 22, wherein a refraction index of said stop layer is less than a refraction index of said well region and greater than a refraction index of said ~~interlevel dielectric layer~~ dielectric material.

31. (New) A high quantum efficiency sensor comprising:

a well region of a first conductivity in a substrate of a second conductivity opposite to said first conductivity wherein said well region in said substrate forms a photodiode; and

an isolation region within said substrate overlying edge portions of said photodiode; wherein:

said isolation region comprises a stop layer located at the bottom of the isolation region and adjacent to said photodiode;

a dielectric material thereon filling the isolation region; and

the stop layer has a refraction index lower than a refraction index of the well region.

32. (New) The image sensor according to Claim 31 wherein the refraction index of the stop layer is higher than the refraction index of the dielectric material of the isolation region.

33. (New) An image sensor comprising:

a substrate;

a photodiode supported by the substrate; and

a plurality of layers covering the photodiode, wherein a first of the layers, located closest to the photodiode, has a higher index of refraction than a second of the layers, located farther from the photodiode than the first of the layers.

34. (New) The image sensor according to Claim 33, wherein the layers are dielectric layers.

35. (New) The image sensor according to Claim 33, wherein the layers comprise a silicon oxynitride layer adjacent to the photodiode and a silicon oxide layer.

36. (New) The image sensor according to Claim 33, wherein the photodiode is a doped well in the substrate.

37. (New) The image sensor according to Claim 33, wherein the layers comprise three layers, a third of the layers being located farther from the substrate than either the first or the second of the layers, and having a lower index of refraction than either the first or the second of the layers.